EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	2-hydroxyethidium	US-PGPUB	OR	ON	2007/01/17 12:31
L2	1	2-hydroxyethid$4	US-PGPUB	OR	ON	2007/01/17 12:31
L3	2	$hydroxyethid$4	US-PGPUB	OR	ON	2007/01/17 12:31
L4	53	hydroethid$4	US-PGPUB	OR	ON	2007/01/17 12:32
L5	7806	superoxide	US-PGPUB	OR	ON	2007/01/17 12:33
L6	1	L2 WITH L5	US-PGPUB	OR	ON	2007/01/17 12:33
L7	10	L4 WITH L5	US-PGPUB	OR	ON	2007/01/17 12:34

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S2	2	2-hydroxyethidium	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/01/17 12:31
S4	6	hydroxyethid$	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/01/11 15:00
S5	2	2-hydroxyethid$	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/01/11 15:00

STN search

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* * * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 08:21:38 ON 17 JAN 2007

=> file reg
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.21       0.21

FILE 'REGISTRY' ENTERED AT 08:21:50 ON 17 JAN 2007
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STRUCTURE FILE UPDATES:   15 JAN 2007  HIGHEST RN 917470-98-5
DICTIONARY FILE UPDATES:  15 JAN 2007  HIGHEST RN 917470-98-5

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=> ....Testing the current file.... screen

ENTER SCREEN EXPRESSION OR (END):end


=> screen 1569 AND 1700

L1    SCREEN CREATED

=>
Uploading C:\Program Files\Stnexp\Queries\hydroxyethidine.str
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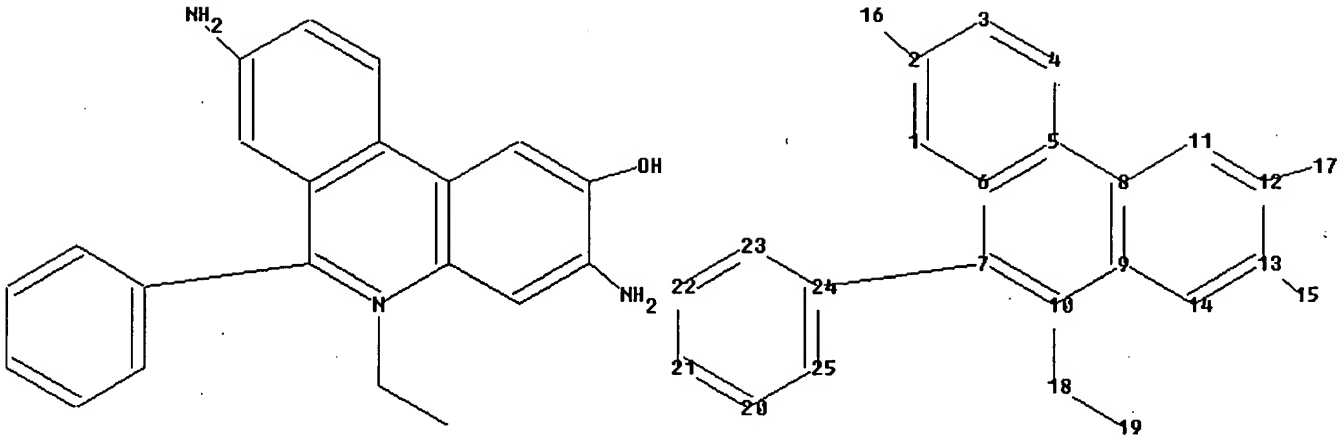

chain nodes :
15 16 17 18 19
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 20 21 22 23 24 25
chain bonds :
2-16 7-24 10-18 12-17 13-15 18-19
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-8 6-7 7-10 8-9 8-11 9-10 9-14 11-12 12-13
13-14 20-21 20-25 21-22 22-23 23-24 24-25
exact/norm bonds :
2-16 10-18 12-17 13-15
exact bonds :
7-24 18-19
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-8 6-7 7-10 8-9 8-11 9-10 9-14 11-12 12-13
13-14 20-21 20-25 21-22 22-23 23-24 24-25
isolated ring systems :
containing 1 : 20 :

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:CLASS 16:CLASS 17:CLASS 18:CLASS
19:CLASS 20:Atom 21:Atom
22:Atom 23:Atom 24:Atom 25:Atom

L2 STRUCTURE UPLOADED

=> que L2 AND L1

L3 QUE L2 AND L1

=> s l3
SAMPLE SEARCH INITIATED 08:22:08 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 3 TO ITERATE

100.0% PROCESSED 3 ITERATIONS 0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

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                        BATCH    **COMPLETE**
PROJECTED ITERATIONS:             3 TO      163
PROJECTED ANSWERS:                0 TO        0

L4            0 SEA SSS SAM L2 AND L1

=> s l3 full
FULL SEARCH INITIATED 08:22:32 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -       92 TO ITERATE

100.0% PROCESSED       92 ITERATIONS                                1 ANSWERS
SEARCH TIME: 00.00.01

L5            1 SEA SSS FUL L2 AND L1

=> d l5

L5   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2007 ACS on STN
RN   854670-32-9  REGISTRY
ED   Entered STN:  12 Jul 2005
CN   Phenanthridinium, 3,8-diamino-5-ethyl-2-hydroxy-6-phenyl- (9CI)  (CA INDEX
     NAME)
MF   C21 H20 N3 O
SR   CA
LC   STN Files:   CA, CAPLUS, CASREACT, USPATFULL
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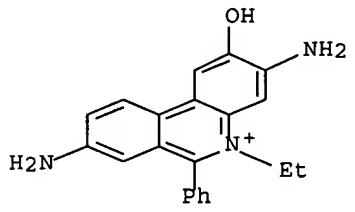


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**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

               8 REFERENCES IN FILE CA (1907 TO DATE)
               8 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> file caplus
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                               174.50     174.71

FILE 'CAPLUS' ENTERED AT 08:23:17 ON 17 JAN 2007


=> s l5
L6            8 L5

=> d bib abs 1-8

L6   ANSWER 1 OF 8  CAPLUS  COPYRIGHT 2007 ACS on STN
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AN 2006:947192 CAPLUS Full-text
DN 145:501641
TI The confounding effects of light, sonication, and Mn(III)TBAP on quantitation of superoxide using hydroethidine
AU Zielonka, Jacek; Vasquez-Vivar, Jeannette; Kalyanaraman, B.
CS Department of Biophysics and Free Radical Research Center, Medical College of Wisconsin, Milwaukee, WI, 53226, USA
SO Free Radical Biology & Medicine (2006), 41(7), 1050-1057
CODEN: FRBMEH; ISSN: 0891-5849
PB Elsevier
DT Journal
LA English
AB Previously, the authors showed that hydroethidine (HE) reacts with intracellular superoxide radical anion (O2·-) to form a unique fluorescent marker product, 2-hydroxyethidium cation (2-OH-E+), that was not formed from HE reaction with other biol. relevant oxidants. Here they rigorously assessed the confounding effects of light, sonication, and Mn(III)TBAP on 2-OH-E+, the HE/O2·- reaction product. Results indicate that continuous exposure to visible light induced photo-oxidation of HE to ethidium cation (E+) by a 2-OH-E+-dependent mechanism. Treatment of HE with ultrasound, a frequently used technique to lyse cell membranes, induced 2-OH-E+ from in situ generation of O2·-. Mn(III)TBAP, a cell-permeable metal-porphyrin complex used as a catalytic antioxidant, reacts with HE to form E+. This finding provides an alternative interpretation for Mn(III)TBAP effects during the HE/O2·- reaction. In order to correctly interpret the HE reaction with O2·- in cells, it is therefore imperative that HE and HE-derived products be measured by HPLC. A new and improved HPLC-electrochem. (HPLC-EC) detection has been developed for anal. of intracellular O2·-. The HPLC-EC method is at least 10 times more sensitive than the HPLC-fluorescence technique for detecting O2·- in cells.
RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2006:488099 CAPLUS Full-text
DN 145:310939
TI Endothelial cell superoxide anion radical generation is not dependent on endothelial nitric oxide synthase-serine 1179 phosphorylation and endothelial nitric oxide synthase dimer/monomer distribution
AU Whitsett, Jennifer; Martasek, Pavel; Zhao, Hongtao; Schauer, Dennis W.; Hatakeyama, Kazuyuki; Kalyanaraman, Balaraman; Vasquez-Vivar, Jeannette
CS Department of Biophysics, Medical College of Wisconsin, Milwaukee, WI, 53226, USA
SO Free Radical Biology & Medicine (2006), 40(11), 2056-2068
CODEN: FRBMEH; ISSN: 0891-5849
PB Elsevier
DT Journal
LA English
AB Tetrahydrobiopterin (BH4) and heat shock protein 90 (hsp90) have been anticipated to regulate endothelial nitric oxide synthase (eNOS)-dependent superoxide anion radical (O2•-) generation in endothelial cells. It is not known, however, whether hsp90 and BH4 increase O2•- in a synergistic manner, or whether this increase is a consequence of downstream changes in eNOS phosphorylation on serine 1179 (eNOS-S1179) and changes in dimer/monomer distribution. Here O2•- production from purified BH4-free eNOS and eNOS:hsp90 complexes determined by spin-trapping methodol. showed that hsp90 neither inhibits O2•- nor alters the requirement of BH4 to inhibit radical release from eNOS. In endothelial cells, O2•- detection with the novel high-performance liquid chromatog. assay of 2-hydroxyethidium showed that

inhibition of hsp90 did not increase O2•-, while a significant increase in O2•- was detected in BH4-depleted cells. Radicicol, a hsp90 inhibitor, disrupted eNOS:hsp90 association, decreased eNOS-S1179, but increased biopterin production in a dose-dependent fashion. These changes were followed by an increase in eNOS activity, demonstrating that high biopterin levels offset inhibition of eNOS phosphorylation and diminished interaction with hsp90. In contrast, depletion of biopterin did not affect hsp90 levels or interaction with eNOS or eNOS dimer/monomer ratio in bovine aorta endothelial cells (BAECs). We conclude that low BH4 but not inhibition of hsp90 increases O2•- in BAECs by mechanism(s) that unlikely involve phosphorylation to eNOS-S1179 or eNOS monomerization.

RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2006:474498 CAPLUS Full-text
DN 145:308682
TI Definitive evidence for the nonmitochondrial production of superoxide anion by human spermatozoa
AU De Iuliis, Geoffry N.; Wingate, Jordana K.; Koppers, Adam J.; McLaughlin, Eileen A.; Aitken, R. John
CS Centre of Excellence in Biotechnology and Development and Discipline of Biological Sciences, University of Newcastle, Callaghan, 2308, Australia
SO Journal of Clinical Endocrinology and Metabolism (2006), 91(5), 1968-1975
CODEN: JCEMAZ; ISSN: 0021-972X
PB Endocrine Society
DT Journal
LA English
AB Oxidative stress in the male germ line was associated with poor fertility, impaired embryonic development, miscarriage, and childhood disease. Such stress is known to be associated with the peroxidn. of unsatd. fatty acids in the sperm plasma membrane and oxidative DNA damage to both the nuclear and mitochondrial genomes. However, the source of the free radicals responsible for such damage is still unresolved. The objective of this study was to chemical validate the use of dihydroethidium (DHE) as a probe for detecting the generation of superoxide anion by human spermatozoa and to examine the relationship between this activity and defective sperm function. DHE and SYTOX green were used in conjunction with flow cytometry and HPLC to investigate superoxide generation by human spermatozoa. Cause and effect relationships were established using menadione to artificially drive superoxide production by these cells. HPLC, mass spectrometry, NMR spectroscopy, and spectrofluorometry were used to demonstrate that human spermatozoa generate the superoxide-specific product, 2-hydroxyethidium, from DHE. Spontaneous superoxide production by human spermatozoa was found to originate from a nonmitochondrial source and was inversely correlated with sperm motility. A causative relationship between superoxide generation and sperm function was demonstrated when the pharmacol. stimulation of this activity with menadione was shown to result in both severe motility loss and DNA damage. These studies validate a methodol. for investigating the origins of oxidative stress in the male germ line and demonstrate, for the first time, the significance of superoxide generation by human spermatozoa in the etiol. of this condition.

RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2005:1233974 CAPLUS Full-text
DN 144:83346
TI An ultrasensitive fluorescent assay for the in vivo quantification of

superoxide radical in organisms
AU Georgiou, Christos D.; Papapostolou, Ioannis; Patsoukis, Nikolaos; Tsegenidis, Theodore; Sideris, Theodore
CS Department of Biology, Section of Genetics, Cell Biology, and Development, University of Patras, Patras, 26100, Greece
SO Analytical Biochemistry (2005), 347(1), 144-151
CODEN: ANBCA2; ISSN: 0003-2697
PB Elsevier
DT Journal
LA English
AB Superoxide radical is a very important parameter of oxidative stress involved in a variety of biol. phenomena; therefore, its in vivo study is of utmost significance. However, its accurate detection is a challenge due to its short lifetime and its very low physiol. concentration All current assays are qual. and nonspecific, and at best they are performed in vitro. The current dihydroethidine-based assay overcomes all these problems and introduces the following novelties. First, it measures the in vivo superoxide production in animals, plants, and microorganisms. Second, it is ultrasensitive and very simple in that it can measure superoxide radical as low as 1.5 pmol in biol. samples as low as 5 mg. Third, the very high sensitivity of the assay renders possible, for the first time, the measurement of the actual rate of formation of superoxide radical under physiol. and simulated nonphysiol. conditions.
RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2005:1103255 CAPLUS Full-text
DN 143:362879
TI Methods for the preparation and isolation of 2-hydroxyethidium and use in hydroethidine-based superoxide detection as standard
IN Kalyanaraman, Balaraman; Zhao, Hongtao
PA USA
SO U.S. Pat. Appl. Publ., 20 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2005227307	A1	20051013	US 2004-820599	20040408
PRAI US 2004-820599		20040408		

AB The inventors have purified the fluorescent product in the hydroethidine-based superoxide detection assays and further identified the product as 2-hydroxyethidium. Methods for synthesizing 2-hydroxyethidium and for detecting and quantifying superoxide are provided.

L6 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2005:978284 CAPLUS Full-text
DN 144:107882
TI Mechanistic similarities between oxidation of hydroethidine by Fremy's salt and superoxide: stopped-flow optical and EPR studies
AU Zielonka, Jacek; Zhao, Hongtao; Xu, Yingkai; Kalyanaraman, B.
CS Department of Biophysics and Free Radical Research Center, Medical College of Wisconsin, Milwaukee, WI, 53226, USA
SO Free Radical Biology & Medicine (2005), 39(7), 853-863
CODEN: FRBMEH; ISSN: 0891-5849
PB Elsevier
DT Journal
LA English

OS CASREACT 144:107882

AB The authors have previously shown that superoxide radical anion (O2•-) reacts with hydroethidine (HE) to form a product that is distinctly different from ethidium (E+) (Zhao et al., Free Radic. Biol. Med. 34:1359; 2003). The structure of this product was recently determined as the 2-hydroxyethidium cation (2-OH-E+) (Zhao et al., Proc. Natl. Acad. Sci. USA 102:5727; 2005). Using HPLC and mass spectrometry techniques, 2-OH-E+ is formed from the reaction between HE and nitrosodisulfonate radical dianion (NDS) or Fremy's salt. The reaction kinetics and mechanism were determined using steady-state and time-resolved optical and EPR techniques. Within the first 50 ms, an intermediate was detected. Another intermediate absorbing strongly at 460 nm and weakly at 670 nm was detected within a second. The structure of this species was assigned to an imino quinone derivative of HE. The stoichiometry of the reaction indicates that two mols. of NDS were needed to oxidize a mol. of HE. The authors postulate that the first step of the reaction involves the hydrogen atom abstraction from HE to form an aminyl radical that reacts with another mol. of NDS to form an adduct that decomps. to an imino quinone derivative of HE. A similar mechanism was proposed for the reaction between HE and O2·-. The reaction between HE and the Fremy's salt should provide a facile route for the synthesis of 2-OH-E+, a diagnostic marker product of the HE/O2•- reaction.

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:600020 CAPLUS Full-text

DN 143:434254

TI Detection and characterization of the product of hydroethidine and intracellular superoxide by HPLC and limitations of fluorescence. [Erratum to document cited in CA143:055106]

AU Zhao, Hongtao; Joseph, Joy; Fales, Henry M.; Sokoloski, Edward A.; Levine, Rodney L.; Vasquez-Vivar, Jeannette; Kalyanaraman, B.

CS Department of Biophysics and Free Radical Research Center, Medical College of Wisconsin, Milwaukee, WI, 53226, USA

SO Proceedings of the National Academy of Sciences of the United States of America (2005), 102(25), 9086
CODEN: PNASA6; ISSN: 0027-8424

PB National Academy of Sciences

DT Journal

LA English

AB The last sentence of the abstract, "We conclude that the HPLC/fluorescence assay using HE as a probe is more suitable reactive oxygen species for detecting intracellular O2•-," should read: "We conclude that the HPLC/fluorescence assay using HE as a probe is more suitable for detecting intracellular O2•-." This change does not alter the conclusions of the article.

L6 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:372758 CAPLUS Full-text

DN 143:55106

TI Detection and characterization of the product of hydroethidine and intracellular superoxide by HPLC and limitations of fluorescence

AU Zhao, Hongtao; Joseph, Joy; Fales, Henry M.; Sokoloski, Edward A.; Levine, Rodney L.; Vasquez-Vivar, Jeannette; Kalyanaraman, B.

CS Department of Biophysics and Free Radical Research Center, Medical College of Wisconsin, Milwaukee, WI, 53226, USA

SO Proceedings of the National Academy of Sciences of the United States of America (2005), 102(16), 5727-5732

CODEN: PNASA6; ISSN: 0027-8424
PB National Academy of Sciences
DT Journal
LA English
AB Here we report the structural characterization of the product formed from the reaction between hydroethidine (HE) and superoxide (O•-2). By using mass spectral and NMR techniques, the chemical structure of this product was determined as 2-hydroxyethidium (2-OH-E+). By using an authentic standard, we developed an HPLC approach to detect and quantitate the reaction product of HE and O•-2 formed in bovine aortic endothelial cells after treatment with menadione or antimycin A to induce intracellular reactive oxygen species. Concomitantly, we used a spin trap, 5-tert-butoxycarbonyl- 5-methyl-1-pyrroline N-oxide (BMPO), to detect and identify the structure of reactive oxygen species formed. BMPO trapped the O•-2 that formed extracellularly and was detected as the BMPO-OH adduct during use of the EPR technique. BMPO, being cell-permeable, inhibited the intracellular formation of 2-OH-E+. However, the intracellular BMPO spin adduct was not detected. The definitive characterization of the reaction product of O•-2 with HE described here forms the basis of an unambiguous assay for intracellular detection and quantitation of O•-2. Anal. of the fluorescence characteristics of ethidium (E+) and 2-OH-E+ strongly suggests that the currently available fluorescence methodol. is not suitable for quantitating intracellular O•-2. We conclude that the HPLC/fluorescence assay using HE as a probe is more suitable reactive oxygen species for detecting intracellular O•-2.•.
RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> log y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	23.11	197.82

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-6.24	-6.24

STN INTERNATIONAL LOGOFF AT 08:23:48 ON 17 JAN 2007